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SHORT COMMUNICATION

Clinical pharmacists: Bridging the gap between patients and physicians

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Abstract The clinical pharmacy has spread out drastically in terms of its professional services throughout the past few years. The clinical pharmacist become a crucial element of healthcare team and promotes patient care by interacting with physician and patient. The aim of this paper is to highlight the role of clinical pharmacists in various departments. It concludes that the features of interactions occurring between clinical pharmacists and physicians influence the teamwork between pharmacists and physicians and provide better patient care.

The clinical pharmacy has spread out drastically in terms of its professional services throughout the past few years. Now the clinical pharmacy profession has been renowned as an important profession in the multidisciplinary setup of health care. The clinical pharmacist becomes a crucial element of healthcare team and promotes patient care by interacting with physician and patient. As clinical pharmacists have the precise knowledge about therapeutics and regular interaction with prescribers, they are ideally placed to bridge the gap between patients and physicians. Association of clinical pharmacist and clinician can provide a strong base for quality assured patient care. The presence of a clinical pharmacist on the ward was a revolutionary feature of developments in the pharmacy field. Clinical pharmacists participate in ward rounds with physicians and provide their suggestions or recommendations wherever needed. The physicians prescribe medicines and the pharmacist checks the prescription to ensure rational use of drugs. They check whether there is an indication for the drug, is it the right drug/dose/duration/dosage/time, etc. If there is any deviation from these, they make appropriate interventions, inform the prescriber and document the interventions. Complimentary agreement between the physicians concerning the impact of the intervention indicates that the pharmacists' intervention had a confirmed outcome on therapy.

Clinical pharmacists can contribute their efficiencies in medication review, identification of drug related problems, therapeutic recommendations and promotion of medication compliance. They obtain medical and medication history, check medication errors including prescription, dispensing and administration errors, identify drug interactions, monitor adverse drug reactions (ADR), suggest individualization of dosage regimen, provide patient counseling, etc. They also provide information about the use of drugs and medical devices

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like inhaler, insulin pen, eye drops, nasal sprays, etc. Participation of a clinical pharmacist in ward/ICU rounds and clinical discussions helps to identify, prevent or reduce drug interactions and ADR (Kucukarslan et al., 2003). In addition to this, a clinical pharmacist can also actively participate in developing cost-effective patient compliant therapy. They can actively participate in creating a database for each drug as well as in clinical trials. Pharmacists have an up-to-date knowledge in the changing world of medicine and they can contribute effectively for clinical research project and other ongoing research programs. In addition to this, clinical pharmacists do drug dilutions, extemporaneous preparations, dose calculations, etc.

Clinical pharmacy services develop and maintain a clinical practice with a patient care service, cooperating with medical and nursing personnel to optimize the pharmacotherapeutic aspects of patient care (Makowsky et al., 2009). This provides optimal selection of pharmacologic agents, and design of a regimen to maximize therapeutics benefit and minimize toxicity. Clinical pharmacists provide daily follow-up on the clinical effects of the regimen with adjustments as necessary to achieve desired outcomes.

Need of clinical pharmacists in various departments

Clinical pharmacists are responsible to conduct a complete patient interview on medical history, social and family history, history of allergy, use of OTC drugs, dietary supplements and alternative systems of medicine. Clinical pharmacists perform review of drug therapy which helps to recognize and utilize relevant clinical and lab data to identify and resolve drug related problems such as duplication of therapy, drug–drug and drug–food interactions, contraindications, inappropriate dosage [frequency, strength], lack of basic lab monitoring requirements, potential ADRs, inappropriate drug selection, drug therapy without indication or no drug order for an indication, non-adherence to medications and availability of cost effective alternatives. They can assist in therapeutic decision making and the preparation of guidelines for antibiotic usage by assessing cost effectiveness.

Provision of unbiased, up-to-date information on any aspect of drug use is another major responsibility of a clinical pharmacist. They are capable of providing information on strength, availability of drug formulations, brand and cost. They provide information regarding empirical dosing of drugs in patients with impairment of renal or hepatic function. Since the clinical pharmacists have a thorough knowledge about the drugs they can easily identify and notify look-alike and sound-alike drugs. They can actively participate in therapeutic drug monitoring, medical camps and patient awareness programes on medication usage.

Clinical pharmacists ensure that reconstitution, dilution, stability, storage, compatibility and administration of drugs are carried out appropriately. They facilitate conversion of parenterals to oral dosage forms when indicated. Provision of alert cards for selected patients who suffer from ADR or taking medications that require special warning/caution (epilepsy, cardiac problem, drug allergy or taking insulin, warfarin, aspirin, etc) is another major task.

They have an active participation in physician rounds in general and specialty departments. They provide patient counseling on medication usage, use of devices and life style changes needed. The clinical pharmacist education sessions and medication adherence programmes (pill box, use of diary logs and follow up calls) proved beneficial in reducing mean FBS and HbA1c significantly (Farsaei et al., 2011). Clinical pharmacist in the endocrinology department gave counseling regarding the proper usage of insulin pens, administration of insulin injection, dietary restrictions, lifestyle modifications, importance of regular check up, etc.

Clinical pharmacists in pediatrics and neonatology help in dose calculation and dosage form modification. The increased need for calculations and dilutions of pediatric medicines, and a requirement to adjust dose of an individual patient based on age, gestational age, weight and surface area, provide a greater opportunity for a clinical pharmacist in medication management process. They can help to prepare pediatric/neonatal formulary. They provide counseling to parents regarding medication and immunization.

Clinical pharmacists in the stroke unit can identify risk group of patients (bleeding), potential drug interactions and reduce adverse effects. They monitor the INR range of patients taking warfarin, and give proper advice to adjust the dose of warfarin after consulting with the doctor. They provide counseling regarding the diet, need for INR monitoring, adverse effects, its management, etc. Clinical pharmacist in oncology department calculates the body surface area (BSA) for the patients who are due for the next chemotherapy based on their height and weight.

In patients with renal impairment, clinical pharmacist should emphasize on drug dosing adjustments. An increase in morbidity and mortality as well as therapeutic costs will be the consequences of failure in doing dosage adjustment. In these contexts it is highly recommended to estimate creatinine clearance prior to drug ordering and use reliable dosing guideline. The adjustment of dose can be done by interval extension or dose reduction. Estimates of renal function are helpful in identifying patients who may need shorter dose intervals (high clearance) or may be adequately treated with smaller dose amounts or longer dose intervals (low clearance). Patients who have undergone organ transplantation are also necessitated to take a multitude of drugs and adherence to these medications is important to get around graft rejection and medical costs. A clinical pharmacist can be really helpful to prevent the progression of ESRD by providing patient counseling about lifestyle modification and educating and motivating the risk group patients for regular check up and adhering to therapy.

Clinical pharmacy services are not limited to the above mentioned activities. Clinical pharmacists can implement ever-expanding roles like therapeutic drug monitoring and managing of patient's pharmacotherapy which significantly improve patient care. The features of interactions occurring between clinical pharmacists and physicians influence the teamwork between pharmacists and physicians and provide better patient care. Clinical pharmacist could find a solution for a number of queries which included information of drug profile, indication or dosage, adverse drug events, patient management, drug interactions, drug use in pregnancy and lactation, poisons and information regarding storage of drugs, etc. They work with patients and other health professionals, to support and assist patients to make lifestyle changes to improve health outcomes. Improvements in the care of

patients, level of attention and disease management result in control of risk factors and decline in health care costs.

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